Actor-Network Theory: A Briefing Note and Possibilities for Social and Environmental Accounting Research

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ABSTRACT Actor-network theory (ANT) has been increasingly utilised within the accounting and management literature (Justesen and Mouritsen, 2011) and is argued to be useful because it includes both the human and the non-human in its analytical frame. ANT bypasses a nature/society dualism and, as such, it may help to develop organisational theories that can promote ecologically and socially sustainable development (Gladwin et al., 1995). This article outlines the central commitments of ANT, its language, how it has been applied and its critiques. The article then discusses how ANT may contribute to social and environmental accounting research and the examination of what is social and what is environment. As such, this paper is an ANT ‘primer’ which aims to support social and environmental accountants in the exploration of new directions and the enabling of more ecologically and socially sustainable practices to come forward.

Introduction

Organisations have been identified as being both culpable of but also potential alleviators of environmental degradation (Gray et al., 1993; Devereaux Jennings and Zandbergen, 1995; Gladwin et al., 1995; Sethi, 1995; Shrivastava, 1995a, 1995b, 1995c; Bakan, 2004; Deegan and Shelly, 2006), particularly if it is accepted that we live in a world where ‘organizations are the means through which interests are realized’ (Egri and Pinfield, 1999, p. 225). Scholars (see, e.g., Gladwin et al., 1995; Purser et al., 1995; Shrivastava, 1995a; Egri and Pinfield, 1999) have argued that the ability of organisations to alleviate degradation is hampered by organisational theories that are ‘constricted by a fractured epistemology’ (Gladwin et al., 1995, p. 874) which separates society from nature, treating humans and nature as separate Cartesian categories (Latour, 1999a, 1999b; Castree, 2002; Newton, 2002). While treating society and nature as distinct domains may allow us to make sense of complex situations, it is problematic as all ‘inputs, throughputs, and outputs have systemic interconnections among themselves and with environmental, economic, social and organisational variables’ (Shrivastava, 1995c, p. 942). In short, we fail to appreciate fully how we are not separate from nature but are...
surrounded by and a part of it (Ingold, 2011). To tackle this artificial separation, Egri and Pinfield (1999), Gladwin et al., (1995), Purser et al., (1995) and Shrivastava (1995a) make a case for embracing new management paradigm(s) that are less anthropocentric and more ecocentric. They advocate a move from beliefs and values that have humans as the central locus of value towards those that see nature as the central locus. A difficulty with this move from anthropocentrism towards ecocentrism is that it ‘tends toward one or another extreme image of man’s [sic] relationship to nature’ (Hoffman and Sandelands, 2005, p. 147): either man is everything and dominates nature (anthropocentrism) or man is nothing and nature dominates (ecocentrism) and in both situations the society/nature dualism remains.

In an attempt to escape dualism, this paper introduces and argues for the further use of actor-network theory (ANT) to assist our understanding of how organisations are interconnected to nature and culture. ANT scholars (Latour, 1993, 1999a, 1999b, 2004, 2005; Castree, 2002; Ivakhiv, 2002) argue that environmental and social degradations are phenomena that are ‘simultaneously real, like nature, narrated like discourse and collective like society’ (Ivakhiv, 2002, p. 392); in short, they are ‘nature culture imbroglios’¹ (Ivakhiv, 2002, p. 393). While the use of terms such as ‘nature’ and ‘culture’ may point towards conceiving of these aspects as being in separate realms, with ANT what is being promoted is the absence of a split between humans and nature. Rather, the ‘realms’ are entwined and cannot be understood by taking only the vantage point offered by focusing either on humans or on nature. Thus ANT attempts to abandon distinctions between these realms (see Law, 1992; Latour, 1993, 2005; Ashmore et al., 1994; Lee and Brown, 1994; Callon, 1997; Lee and Stenner, 1999; Fox, 2000; Newton, 2001, 2002; Castree, 2002; Ivakhiv, 2002; O’Connell et al., 2009). In this regard, using ANT promotes the idea that we (humans) ‘are not in society anymore than we are in nature’ (Latour, 2005, p. 241) and that humans and nature are co-constituted by each other and the terms ‘humans’ and ‘nature’ are merely useful locational identifiers. In taking this stance, ANT arguably allows us to ‘stitch back together the socionatural imbroglios that [a society-nature dualism]...has rent asunder’ (Castree, 2002, p. 118). As such we believe it is a theory that might allow scholars to contribute further to ecologically and socially sustainable development (Castree, 2002; Ivakhiv, 2002; Newton, 2002; Latour, 2004). As Ivakhiv states, by providing ‘a non-dualistic model of human-environmental relations...[ANT may aid] in the task of developing more appropriate ecological practices for a...pluralistic...world’ (2002, p. 392). As such, the use of ANT by social and environmental accounting researchers is likely to be a rewarding avenue to explore as the goals expressed by Ivakhiv (2002), for example, are broadly shared by the social and environmental accounting community.

This paper seeks to support the possibilities for such a linking and proceeds in the following manner. First ANT is introduced and an explanation of this ‘theory’² is provided. Second, some of the language of ANT is introduced and explained. Third, critiques of ANT are outlined and discussed. Taken together, these sections seek to provide an introduction to ANT. In section four how ANT has been deployed in accounting and management research is described and some prescriptions regarding the use of ANT are outlined. Fifth, the paper tentatively explores how ANT might be deployed by social and environmental accounting researchers. Finally, section six concludes with a summary and some closing comments.

1. Introducing ANT

(Lee and Stenner, 1999; Latour, 2004, 2005, 2010; Harman, 2009). Rather, ANT aims to bypass any social/natural divide by arguing that ‘nature and society are two collectors that are a premature attempt to collect in two opposite assemblies one common world’ (Latour, 2005, p. 245). Indeed, Latour suggests that ‘it is a grave methodological mistake to limit in advance...the range of entities that may populate the social world’ (2005, p. 227). Further, he argues that it is ‘counterintuitive to try and distinguish what comes from viewers and what comes from the object when the obvious answer is to go with the flow’ (2005, p. 237). Thus what ANT is asking a researcher to do is to eschew adherence solely to perspectives such as social constructionism or realism in analysis. Rather, the researcher is asked to get into the middle of the action and observe it (the action and the processes) and not move too soon to an explanation based solely on societal explanations or those arising solely from the natural world. Thus with ANT there is no demarcation of what is valid for analysis and what is not, all is included within the frame of observation and analysis.

The application of these principles can be illustrated by an example from Law (1992), exploring what a sociologist is. Law suggests that if ‘you took away my computer, my colleagues, my office, my books, my desk, my telephone, I wouldn’t be a sociologist writing papers...I’d be something quite other’ (1992, p. 4). Hence ‘social agents are never located in bodies and bodies alone, but rather an actor is a patterned network of heterogeneous relations’ (1992, p. 4) between the human and the non-human and is social/natural in form (Callon, 1986; Castree, 2002). To explain further Latour offers an example of the gun and the human, noting two slogans are typically found in debates about guns and their possible restriction. First ‘Guns kill people’ and second ‘Guns don’t kill people; people kill people’ (1999b, p. 76). Latour argues that the first slogan places all the agency in the gun (object) and the human (subject) is a mute intermediary for the gun’s intentions, whereas the second slogan places agency in the human (subject) and the gun (object) is a mute intermediary of a human’s intentions. Hence either the gun or the human is effectively everything or nothing. ANT, however, would argue that in combination the gun and the human realise a heterogeneous relationship (of the gun-human) which in turn translates into a goal. Thus, with ANT, neither the gun nor the human is the sole explicator or just a mute intermediary; both add something to the situation under study.

Once the individual, the bounded self, is de-prioritised, humans are viewed as processes (Flannery, 2010) and an understanding that all the attributes that may normally be ascribed to human beings ‘are generated in networks that pass through and ramify both within and beyond the body’ (Law, 1992, p. 4). As such, with an ANT lens humans cannot be seen in isolation from that which makes them purposeful; humans and non-humans are intermeshed (Steen et al., 2006; O’Connell et al., 2009) and exist in actor-networks (Law, 1992). Consequently ANT assumes the ‘radical indeterminacy’ (Callon, 1997, p. 2) of an individual actor and that what we may term an actor or a human is merely a locational identifier for where action may be occurring.

As a result, ANT brings within its analytical view all entities (humans and non-humans) and explicitly sets out to ‘clear the slate of nature-culture dualism’ (Ivakhiv, 2002, p. 391). This liberalism, however, is ‘an analytical stance, not an ethical position’ (Law, 1992, p. 4). ANT does not intend that objects become endowed with ethical or moral agency (Law, 1992). Rather, ANT is about giving ‘due consideration and recognition of [both] the non-human and human’ (O’Connell et al., 2009, p. 20) in the analysis. Indeed, ANT is about showing how humans and non-humans are intermeshed and focuses on relationships between entities (Lee and Hassard, 1999; Lowe, 2001; O’Connell et al., 2009). When using ANT, the analyst has to place themselves in the middle of the action where ‘connections are continuously being made’ (Steen et al., 2006, p. 207) and remade, decentre everything and think relationally rather than in separations (Castree, 2002) or bounded wholes. In this regard ANT ‘defamiliarizes
what we may otherwise take for granted’ (Calas and Smircich, 1999, p. 663) and everything becomes ‘an effect of an array of relations’ (Law, 2000, p. 1). Boundaries and differences are dissolved (Law, 1992, 1999, 2000; Newton, 2002; McLean and Hassard, 2004; Latour, 2005) and are only ‘observable’ in so much as the analyst places them as an explanatory device into the action. Thus ‘cultures and ecologies...[are] not some essential bounded wholes but at best only analytically distinguishable moments within the fluid activity of network building’ (Ivakhiv, 2002, p. 399). In short, all is a performance rather than a final or original state (Calas and Smircich, 1999).

In sum, ANT brings forward a world of work, movement and flow where everything is a relational field. This can be a challenging aspect to ANT as ‘order becomes an effect generated by heterogeneous means’ (Law, 1992, p. 3), not some final or end state. Thus entities as we discern them are a momentary pause, a form of punctualisation, ‘an achievement, a process, a consequence, a set of resistances overcome, a precarious effect’ (Law, 1992, p. 8). A difficulty with this focus on flow is that nothing is ever complete, final or autonomous (Law, 1992) and there are no fixed points from which to analyse or build theory. In an attempt to escape this quandary, Law (2000) suggests that ANT can occur at various levels of magnification. To explain, in discussing his ANT analysis of Portuguese imperialist expansion in the fifteenth century, Law outlines how the analysis can be done at the level of an individual vessel and its ‘network of hull, spars, sails, ropes, guns, food stores’ (2000, p. 3) through an increased magnification to focus on the navigational system of a ship and its network or through a decreased magnification to consider the Portuguese imperial system as a whole and its ‘ports...its vessels, its military dispositions [and] its markets’ (2000, p. 3). Similarly the social and environmental accountant might choose a calculation, a definition, a website, a report, an individual, a team, an organisation, an industry, a feature in a landscape, an ecosystem or any variant thereof that is either a human or non-human as the focal point of their analysis.

2. The Language of ANT

To support ANT’s attempts to bypass essential differences, a particular vocabulary has emerged within ANT. Five key terms are now explained in order to facilitate further understanding of ANT (a longer glossary is contained in Table 1).

The term ‘actant’ is used to resist any anthropocentrism and anthropomorphism that may be associated with the term actor (Fox, 2000). Thus ‘actant’ is a term that aims to be more neutral than the term ‘actor’ and to reinforce that within an ANT analytical stance both humans and non-humans can act. The term may also help to reinforce that ‘agency is a relational effect’ (Castree, 2000, p. 121) and an actant is defined as a relational field that is the effect of an array of relations (Law, 2000) and a locational identifier to network traces (Latour, 2005).

Second, the term ‘collective’ is intended to be a neutral term to help bypass any ‘reified and abstract use of collective categories’ (Steen et al., 2006, p. 307) such as society and nature and thus reinforce that with ANT the analytical stance is open.

Third, the term ‘flat land’ is used to denote how scale and hierarchy of any form are not assumed and all connections need to be fully traced (Latour, 2005). Within ANT the world is not reduced to agency and structure frameworks or scalar contextualisers such as macro and micro and hence all relationships have to be fully traced. If the scale or ‘structure’ cannot be fully explained through relationships or patterns of relationships then it is assumed that all the relationships have not been fully traced (Latour, 2005) and the analyst has missed some aspect.

Fourth, the term ‘translation’ is a term used to highlight how, with reference to the earlier sociologist in a web of relationships example, the sociologist and a journal might relate. Specifically, the sociologist may wish to promulgate their current thinking and this is translated through an
<table>
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<th>Term</th>
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| Actant             | - The term actant is more neutral than the term actor (Castree 2002; Ivakhiv, 2002; McLean and Hassard, 2004) and it aims to reinforce that ‘agency is a relational effect generated by interacting components whose activity is constituted in the networks of which they form a part’ (Castree, 2002, p.121).  
- An actant can be at many levels – an institution, an individual, a country, a thing (Law, 2000) and an actant reveals where the plan is hatched. It is a locational identifier to the network traces that brought the plan into the world (Latour, 2005).  
- Importantly an actant designates a source but is also a mediator being mediated (Latour, 2005). |
| Black box          | Those facts that are generally accepted as true are said to be black boxed. Although facts in these boxes can be challenged, arguing the link between the claimant and the claim is no longer necessarily required because of the taken-for-granted status (O’Connell et al., 2009). |
| Boundary objects   | - Boundary objects have been described as having a ‘hard’ outside and a ‘plastic’ inside (Briers and Chua, 2001). For example, a product has a hard outside (that is, it is an unambiguous actant when observed by another actant external to an organisation) yet it can be seen as a cost by accountants and a revenue item by marketers (thereby giving it a plastic inside). ‘These common objects enable functional specialists to use their different perspectives relatively autonomously and for cooperating parties to share a common referent’ (Briers and Chua, 2001, p. 242). Therefore, a ‘boundary object ties together actors with diverse goals because it is common to multiple groups but is capable of taking on different meanings with each of them’ (Briers and Chua, 2001, p. 241). |
| Centre of calculation | - ‘Any site where inscriptions are combined and make possible a type of calculation. It can be a laboratory, a statistical institution, files of a geographer, a data bank and so forth. This expression locates in specific sites an ability to calculate that is too often placed in the mind’ (Latour, 1999b, p. 304).  
- Within centres of calculation ‘inscriptions of different traces are accumulated and used to act on a distant periphery’ (Cuganesan, 2008, p. 82). |
| Collective         | - A neutral term to bypass social and natural categorisation and emphasise that the world is full of things as opposed to two realms of nature and society (Latour, 2005). |
| Intermediary       | - An intermediary ‘transports meaning or force without transformation’ (Latour, 2005, p. 39). For all practical purposes an intermediary can be taken as being a black box. |
| Mediators          | - ‘Mediators transform, translate, distort and modify the meaning or the element they are supposed to carry’ (Latour, 2005, p. 39). A conversation maybe a complex chain of mediators where passions, opinions and attitudes are present at every turn. |
| Organisation       | - ‘An achievement, a process, a consequence, a set of resistances overcome, a precarious effect’ (Law, 1992, p. 8). |
| Overflowing        | - Denotes the impossibility of total framing, i.e. internalising all externalities (Callon, 1997). |
| Plasma             | - That which is not yet formatted, measured or engaged with (Latour, 2005). |
| Punctualisation    | - ‘Network patterns that are widely performed are often those that can be punctualised. This is because they are network packages – routines – that can, if precariously, be more or less taken for granted in the process of heterogeneous engineering. In other words, they can be counted as resources, resources which may come in a variety of forms: agents, devices, texts, relatively standardised sets of organisational relations, social technologies, boundary protocols, organisational forms – any or all of these…Punctualisation is always precarious; it faces resistance, and may degenerate into a failing network. On the other hand, punctualised resources offer a way of drawing quickly on the networks of the social without having to deal with endless complexity’ (Law, 1992, p. 5). |
| Translation        | - ‘Translation is a verb which implies transformation and the possibility of equivalence, the possibility that one thing (for example an actor) may stand for another (for instance a network)’ (Law, 1992, p. 5).  
- Translation generates ordering effects such as institutions and organisations (Law, 1992). |
Thus the term ‘translation’ attempts to highlight that the two actants (the sociologist and the journal) act on each other and in so doing neither is autonomous (Latour, 1999b). More widely any device, organisation or institution is generated through a process of translation (Law, 1992) and it is through translations between different actants that new negotiated goals are realised (Steen, 2010). A further example to help elucidate this aspect of ANT, and avoid the retreat to an object- or subject-orientated focus, is to consider how nothing can be separate from the assemblage that brought it into being (Guattari, 1989) or more simply how what is visually perceived is actually a result of a relationship between the observer and the observed (Gibson, 1986).

Fifth, the term ‘punctualisation’ is used to highlight and reinforce that everything is in flow and thus ‘precarious’ (Law 1992, p. 5). Thus, while an analyst can use punctualised entities such as an organisation as an actant and locational identifier, the actant is continually in process.

Table 1 outlines some key terms and highlights how ANT is replete with terms that have a particular meaning. Specifically, when using ANT the analyst must remember that anything can be an actant and overall there is a singular collective. In addition, scale or hierarchy cannot be assumed; rather all connections need to be fully traced. Actants, acting upon each other, realise a translation and finally everything is in motion, nothing is given in the order of things and an actant is only ever an effect of an array of relations.

3. Critiques of ANT

An elucidation of ANT would not be complete without considering critiques of it, including those offered by Latour (1999a) and Law (1999), two of the main proponents of ANT. Latour (1999a) argues that what is wrong with ‘actor-network theory’ is the words ‘actor’, ‘network’, ‘theory’ and the punctuation mark (the ‘hyphen’).\(^3\) In particular, Latour (1999a) raises three criticisms. First, he highlights how the term ‘network’ carries with it a view that there is ‘unmediated access to every piece of information’ (Latour, 1999a, p. 15) without translation. This point is also made by Law (1999) who adds that the term ‘network’ carries with it baggage regarding computer networks, social networks, rail networks and the like. Second, Latour (1999a) argues that the hyphenated nature of the term ‘actor-network’ creates a mistaken view that the two terms are in contrast to each other, which itself triggers an agency/structure debate. Rather, the terms were hyphenated to try to emphasise that an actor is a network and vice versa (Latour, 1999a). Third, Latour (1999a) criticises the term ‘theory’, arguing that ANT was never a theory in a conventional sense, in that it cannot sit outside that which it purports to represent, as might a modernist theory. Rather ANT is a ‘very crude method to learn from actors without imposing on them an a priori definition of their world building capabilities’ (Latour, 1999a, p. 20).

Law (1999) also criticises ANT from a naming perspective, arguing that the acronym ANT has done more harm than good, particularly so because of the ‘desire for quick moves and quick solutions...[and] to point and name’ (1999, p. 8) and the ‘tension originally and oxymoronically’ (1999, p. 8) built into the linking of actor and network that is lost in the acronym ANT (rather than using ‘actor-network theory’ in full). He argues this harms understanding because it obscures the complexity of a centred actor in tandem with a decentralised network (which is intended to be relayed by the term ‘actor-network’). While this is problematic, he also notes that the ANT acronym has made the concept ‘easily transportable’ (Law, 1999, p. 8) and hence has increased its influence.

Moving away from critiques levelled by Latour and Law, Ivakhiv (2002) highlights two further criticisms. First, he argues that ANT provides little understanding of the differing motivations of actants because ANT treats all actants symmetrically. Thus the social psychology of